1037-35-68          **Teng Jiang**, Department of Mathematics, University of Kentucky, Lexington, KY 40506, and **Changyou Wang\***, Department of Mathematics, University of Kentucky, Lexington, KY 40506. *Absolute minimizers of L-infinity functionals under the Dirichlet energy constraint.* Preliminary report.

In this talk, I will describe a natural notion of absolute minimizer of

$$F(u, \Omega) = \|H(\nabla u)\|_{L^\infty(\Omega)}$$

subject to

$$D(u, \Omega) = \int_\Omega |\nabla u|^2 \leq E.$$

We prove that such an absolute minimizer is unique. This is achieved by showing roughly that
(i) in $U_1 \equiv \Omega \cap \{x : H(\nabla u)(x) > \Lambda\}$, $u$ is the (unique) absolute minimizer of $H$ without constraint;
(ii) in $U_2 \equiv \Omega \cap \{x : H(\nabla u)(x) \leq \Lambda\}$, $u$ (uniquely) solves the Elastic-Plastic problem:

$$\min\{D(u, U_2) : H(\nabla u) \leq \Lambda\}.$$

This is joint work with Teng Jiang, based on his Ph.D. thesis. (Received January 22, 2008)

1